## A NOTE ON VETERINARY ENTOMOLOGY OF THE SIXTEENTH CENTURY

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George Turbevile's "Booke of Hunting," published in 1576, which outlines the "nature and hunting of the Bucke, Raynedeare, Rowe, wilde Goate, wilde Bore, Hare, Conies, Foxe, Badgerd, wildcat, Otter, Wolfe and Beare" also contains a chapter on "Receipts to heale sundrie diseases and infirmities in houndes and dogges." Among the "diseases and infirmities" mentioned are mange, fleas, lice and ticks and it is of interest, in the light of present-day knowledge, to know the sixteenth century attitude toward these parasites.

Four kinds of mange were recognized, "viz, the red Mange which maketh a dogges legges to swell. The skaly Mange, which groweth in patches, as broad as the palme of a mans hande, and taketh off the skinne where it goeth. The Common Mange, and the blacke Mange, which lyeth under the skinne, and maketh the hair to shed. Of these manges the red Mange is the worst, and most dangerous to heale. For it engendreth and breedeth after a foundering or overheating of a dog, which he taketh in the winter, passing over brooks or pooles, when he is hote and chafed. Or with lying in colde and movst places, before he be well dryed or rubbed. Or it may come by being brought up in the shambles, or butcheries, with the bloud of Oxen or suche like, which overheateth the bloud in a dog. And those kindes of Mange are thus to be healed. First purge your dogge with the receipt which I have before prescribed to be ministered before bathing, and on the morrow let him bloud two ounces or more, upon a vaine which is between the hough string, and the bone of his leg. And within two dayes next following, you shall annoynt him with this oyntment which followeth.

"Take three pound weight of the oyle of Nuttes (I thinke he meaneth Walnuts) a pounde and halfe of the oyle of Cade, two

pound of the oyle of Wormes, three pound of Honny, and a pound and a half of Vyneger, boyle them al together, untill they he halfe wasted. Then put to it Rosen and Pytch, or Tar, of each two pounds and a half, and half a pound of new waxe unwrought, melt them altogether, and stir them with a reede or a When they are well melted and mingled, put therein (from off the fire) a pound and a half of Brymstone, two pound of Copporas well tried, XII ounces of Verdegreace, and styr them into it until it be cold. This oyntment will kill and heale all manner of manges and itches, how strong or vehement And before you anount your dogs therewith, soever they be. wash them and rub them all over with water and salt to clense Afterwardes leade them to a good fire, and tye them there fast, until they may sweate a good houre and a half, giving them water to drinke and lap their belly full. When they are thus dressed and warmed, feede them with good broths made with Mutton, boyled with a little brimstone to warme them within, and with good holsome hearbes, continuing that dyet eight dayes."

Apparently Turbervile's "skaly" mange was due to the presence of psoroptic mites and his "common" and "blacke" mange were due to itch mites, perhaps Sarcoptes scabiei var. Canis.

For the "common Mange" which was supposed to be due to impure drinking water, dirty straw or kennels, the treatment was as follows,—"Take two handfull of wild Cressyes, otherwise called Berne, two handfull of Enula campana, of the leaves or rootes of wylde Sorrell, and the roote of Roerb as much, and the weight of two pounds of rootes of Frodyls, make them al boyle wel in lye and vineger. When they are all well boyled, you must streine the decoction, and take the juice thereof, mingling it with two pounds of grey Sope, and when the Sope is well melted and mingled in it, then rub your dogs with it foure or five days together, and it wil heale them. This receipt and al ye rest I have proved and found medicinable."

For "Fleas, Lice, Tykes, and other vermin on dogs, and to keepe them cleane," the remedy was,—"Take two handfull of the leaves of Berne or wild Cressyes, as much of wild Sorrell, as much of Mynts, and boyle them in lye made with vine leaves, and put amongst them, two ounces of Stavesaker. When it is well boyled, streyne them cleane, and take the decoction, and mingle therein two ounces of Sope, and one ounce of Saffron, with a handfull of Salte. Mingle all this together, and washe your dogs therewith."

From the make-up of these remedies, they were undoubtedly more or less successful, especially the one containing sulphur. At the present time, sulphur in one form or another is used quite effectively against certain mites.